What is claimed is:

1. A process for compacting a green compact, comprising the steps of:

applying a higher fatty acid-based lubricant to an inner surface of a die;

filling a raw material powder whose major component is an active metallic element into the die;

compacting the raw material powder by warm pressurizing to make a green compact; and

ejecting the green compact from the die;

whereby the resulting green compact has a high density.

2. The process set forth in claim 1, wherein the active metallic element is titanium (Ti).

3. The process set forth in claim 2, wherein the raw material powder further comprises at least one element selected from the group consisting of aluminum (Al), zirconium (Zr), hafnium (Hf), vanadium (V), niobium (Nb), tantalum (Ta), scandium (Sc), chromium (Cr), iron (Fe), molybdenum (Mo), tin (Sn), tungsten (W), manganese (Mn), nickel (Ni), copper (Cu), silicon (Si), carbon (C), boron (B), nitrogen (N) and oxygen (O).

4. The process set forth in claim 2, wherein the raw material powder comprises at least one member selected from the group consisting of pure titanium powders, titanium alloy powders and titanium compound powders.

5. The process set forth in claim 1, wherein the active metallic element is Al.

6. The process set forth in claim 5, wherein the raw material powder further comprises at least one element selected from the group consisting of Cu, magnesium (Mg), Mn, Zr, strontium (Sr), Ni, Cr, Fe, Mo, Sn, Si, C, B, N and O.

7. The process set forth in claim 5, wherein the raw material powder comprises at least one member selected from the group consisting of pure aluminum powders, aluminum alloy powders and aluminum compound powders.

8. The process set forth in claim 1, wherein the raw material powder is a mixture powder in which a hard-particle powder comprising at least one member selected from carbides, borides, nitrides and oxides is mixed.

9. The process set forth in claim 1, wherein the active metallic element is Ti; and

a green density being an apparent density of the green compact is 85% or more of a true density determined by a composition of the raw material powder.

10. The process set forth in claim 1, wherein the active metallic element is Al; and

a green density being an apparent density of the green compact

is 90% or more of a true density determined by a composition of the raw material powder.

11. The process set forth in claim 1, wherein, in the compacting step, the raw material powder is formed by warm pressurizing by a compacting pressure of 392 MPa or more while holding a warm state by controlling at least a contact-area temperature in a range of from 100 to 225 ℃, the contact-area temperature being a temperature of an area where the inner surface of the die contacts with the raw material powder.

12. The process set forth in claim 11, wherein the active metallic element is Ti; and

the contact-area temperature falls in a range of from 100 to 225 ℃, and the compacting pressure falls in a range of from 500 to 2,500 MPa.

13. The process set forth in claim 11, wherein the active metallic element is Al; and

the contact-area temperature falls in a range of from 100 to 225 ℃, and the compacting pressure falls in a range of from 392 to 2,500 MPa.

14. The process set forth in claim 1, wherein an ejection force is 10 MPa or less in the ejecting step when a compacting pressure is 784 MPa or more in the compacting step.

15. The process set forth in claim 14, wherein the active metallic

element is Ti; and

the ejection force is 10 MPa or less when the compacting pressure is 784 MPa or more.

16. The process set forth in claim 14, wherein the active metallic element is Al; and

the ejection force is 5 MPa or less when the compacting pressure is 392 MPa or more.

17. The process set forth in claim 14, wherein a pressure ratio of the ejection force with respect to the compacting pressure shows a decreasing tendency when the compacting pressure increases.

18. The process set forth in claim 11, wherein, in the applying step, a powdery higher fatty acid-based lubricant which is dispersed in a dispersion comprising a surfactant is sprayed onto the inner surface of the die, which is heated.

19. The process set forth in claim 18, wherein the dispersion comprises at least one member selected from the group consisting of water and alcohol-based solvents.

20. The process set forth in claim 18, wherein the dispersion comprises a mixture liquid in which water is mixed with an alcohol-based solvent in an amount of from 1 to 50% by volume.

21. The process set forth in claim 18, wherein the temperature of the heated die is a boiling point of the dispersion or more, and

is less than a melting point of the higher fatty acid-based lubricant.

22. The process set forth in claim 1, wherein the higher fatty acid-based lubricant comprises a metallic salt whose major component is at least one member selected from the group consisting of lithium salts, calcium salts and zinc salts of higher fatty acids.

23. The process set forth in claim 18, wherein the higher fatty acid-based lubricant has a maximum particle diameter of 30 μm or less.

24. The process set forth in claim 1, wherein, in the compacting step, a new metallic soap film being different from the higher fatty acid-based lubricant and comprising the active metallic element is formed on a surface of the green compact.

25. The process set forth in claim 24, wherein the active metallic element is Ti; and

the metallic soap film comprises a Ti salt of a higher fatty acid.

26. The process set forth in claim 24, wherein the active metallic element is Al; and

the metallic soap film comprises an Al salt of a higher fatty acid.

27 A green compact produced by a process, comprising the steps

of:

applying a higher fatty acid-based lubricant to an inner surface of a die;

filling a raw material powder whose major component is an active metallic element into the die;

compacting the raw material powder by warm pressurizing to make a green compact; and

ejecting the green compact from the die;

wherein the active metallic element is Ti; and

a green density being an apparent density of the green compact is 85% or more of a true density determined by a composition of the raw material powder.

28. A green compact produced by a process, comprising the steps of:

applying a higher fatty acid-based lubricant to an inner surface of a die;

filling a raw material powder whose major component is an active metallic element into the die;

compacting the raw material powder by warm pressurizing to make a green compact; and

ejecting the green compact from the die;

wherein the active metallic element is Al; and

a green density being an apparent density of the green compact is 90% or more of a true density determined by a composition of the raw material powder.

29. A process for producing a metallic sintered body, comprising

the steps of:

applying a higher fatty acid-based lubricant to an inner surface of a die;

filling a raw material powder whose major component is an active metallic element into the die;

compacting the raw material powder by warm pressurizing to make a green compact;

ejecting the green compact from the die; and

sintering the green compact by heating to make a metallic sintered body;

whereby the resulting metallic sintered body has a high density.

30. A metallic sintered body produced by a process, comprising the steps of:

applying a higher fatty acid-based lubricant to an inner surface of a die;

filling a raw material powder whose major component is an active metallic element into the die;

compacting the raw material powder by warm pressurizing to make a green compact;

ejecting the green compact from the die; and

sintering the green compact by heating to make a metallic sintered body;

wherein the active metallic element is Ti; and

a sintered-body density being an apparent density of the metallic sintered body is 85% or more of a true density determined by a composition of the raw material powder.

31. A metallic sintered body produced by a process, comprising the steps of:

applying a higher fatty acid-based lubricant to an inner surface of a die;

filling a raw material powder whose major component is an active metallic element into the die;

compacting the raw material powder by warm pressurizing to make a green compact;

ejecting the green compact from the die; and

sintering the green compact by heating to make a metallic sintered body;

wherein the active metallic element is Al; and

a sintered-body density being an apparent density of the metallic sintered body is 90% or more of a true density determined by a composition of the raw material powder.

32. A method of working, comprising the steps of:

applying a higher fatty acid-based lubricant to at least one surface selected from the group consisting of a surface of a metallic workpiece whose major component is an active metallic element and a working surface of a die; and

warm working the metallic workpiece with the die.

33. The method set forth in claim 32, wherein the applying step is carried out by at least one method selected from the group consisting of dipping methods in which the workpiece, which is heated, is immersed into a dispersion, in which the higher fatty acid-based

lubricant is dispersed, and spraying methods in which a dispersion, in which the higher fatty acid-based lubricant is dispersed, is sprayed onto the metallic workpiece or the die, which is heated.

34. The method set forth in claim 32, wherein the working step is carried out by at least one working method selected from the group consisting of forging, rolling, extruding, drawing, component rolling, coining, sizing and re-compressing.

35. A worked component part, produced by a process comprising the steps of:

applying a higher fatty acid-based lubricant to at least one surface selected from the group consisting of a surface of a metallic workpiece whose major component is an active metallic element and a working surface of a die; and

warm working the metallic workpiece.